



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,328	10/21/2003	Gilad Israel Elbaz	16113-0328001	2189

26192 7590 05/18/2010  
FISH & RICHARDSON P.C.  
PO BOX 1022  
MINNEAPOLIS, MN 55440-1022

EXAMINER
----------

COUGHLAN, PETER D

ART UNIT	PAPER NUMBER
----------	--------------

2129

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

05/18/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/690,328	<b>Applicant(s)</b> ELBAZ ET AL.	
	<b>Examiner</b> PETER COUGHLAN	<b>Art Unit</b> 2129	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7,9-12,14,15,17-20,22-25 and 27-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9-12,14,15,17-20,22-25 and 27-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>'C' &amp; 'D'</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## Detailed Action

1. Claims 1, 2, 4-7, 9-12, 14, 15, 17-20, 22, 25, 27-57 are pending in this application.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 10, 11, 14, 15, 23, 24, 32, 33, 39, 40, 52, 54 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moldovan in view of Miller. ('Using WordNet and Lexical Operators to Improve Internet Searches', referred to as **Moldovan**; 'WordNet: A Lexical Database for English', referred to as **Miller**)

#### Claim 1

Moldovan teaches receiving data identifying a first knowledge item (**Moldovan**, p35, c1; 'First knowledge item' of applicant maps to 'keyword' of Moldovan.); retrieving,

Art Unit: 2129

from a database, first information to be used in selecting a meaning for the first knowledge item (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan.)

Moldovan does not teach where the database associates each of a plurality of knowledge items with information related to the knowledge item.

Miller teaches where the database associates each of a plurality of knowledge items with information related to the knowledge item. (**Miller**, p39; 'A plurality of knowledge items' of applicant maps to 'a set W of pairs (f, s)' of Miller. 'Knowledge items with information related to the knowledge item' of applicant maps to the string 'f' and its associated sense, 's' of Miller.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Moldovan by matching meaning with an item as taught by Miller to have where the database associates each of a plurality of knowledge items with information related to the knowledge item.

For the purpose of generating meaning which then can be later mapped to similar meanings items.

Moldovan teaches the first information is one or more documents related to the first knowledge item (**Moldovan**, abstract; 'Documents' of applicant maps to 'information is available on the Internet' of Moldovan.); determining, in a computer system comprising one or more servers (**Moldovan**, abstract; A computer system comprising one or more servers of applicant maps to the Internet of Moldovan.), one or more first

Art Unit: 2129

information meanings of the first information (**Moldovan**, p35, c2; 'One or more first information meanings' of applicant maps to 'Consider for example, that  $W_2$  has  $m$  senses' of Moldovan.), the determining comprising, for each document in the first information, selecting one or more meanings for terms in the document from meanings associated with the terms in a computer-readable data collection that includes terms and associates at least one meaning with each of the terms, and then determining one or more first information meanings of the document from the one or more meanings for the terms in the document (**Moldovan**, p35, c1-2, 'Terms and associates at least one meaning with each of the terms' of applicant maps to  $W_2^1, W_2^{1(1)}, W_2^{1(2)}, \dots W_2^{1(k1)}$ ' of Moldovan.); determining, in the computer system, a plurality of candidate knowledge item meanings of the first knowledge item by selecting a plurality of meanings from meanings associated with one or more terms of the first knowledge item in the computer-readable data collection (**Moldovan**, p35, c1-2; 'A plurality of candidate knowledge item meanings of the first knowledge item by selecting a plurality of meanings' of applicant maps to  $W_2^1, W_2^2$  through  $W_2^m$  of Moldovan.); determining, in the computer system, a strength of relationship between each candidate knowledge item meaning and each first information meaning of the first information, and determining a respective selection probability for each candidate knowledge item meaning from the strengths (**Moldovan**, p36, c1; 'Strength of relationship' of applicant maps to 'Using such a query, we get the number of hits for each sense  $i$  of  $W_2$  and this provides a ranking of  $m$  senses of  $W_2$  as they relate to  $W_1$ ' of Moldovan.); and selecting and storing a first candidate knowledge item meaning from the plurality of candidate knowledge

Art Unit: 2129

item meanings as a meaning of the first knowledge item according to the respective selection probability associated with each candidate knowledge item meaning.

(**Moldovan**, p37, c2; Selecting and storing a knowledge item meaning and its associated knowledge item of applicant maps to 'Each such noun is stored together with a weight  $w$  that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan.)

#### Claim 2

Moldovan teaches wherein the first knowledge item is a keyword received as input to a search engine. (**Moldovan**, abstract; Moldovan gives examples of search engines such as 'Alta Vista, Infoseek, Lycos.' The theme of Moldovan is to improve Internet searches. Thus it is inherent that keywords are inputted into search engines.)

#### Claim 10

Moldovan teaches establishing an initial probability, for each of the plurality of candidate knowledge item meanings, that the first knowledge item be resolved to the one of the plurality of candidate knowledge item meanings (**Moldovan**, p37 c1 through c2; 'Establishing an initial probability' of applicant maps to the results of algorithm 1 of Moldovan. This relates to 'candidate knowledge item meaning' and the 'first knowledge item' maps to the 'verb – noun pair  $V - N$ ' of Moldovan.); wherein the selection probabilities are further based on the initial probabilities. (**Moldovan**, p37 c1 through c2;

Art Unit: 2129

'Selection probabilities are further based on the initial probabilities' of applicant maps to 'Only the first 't' possible senses of this ranking will be considered' of Moldovan.)

#### Claim 11

Moldovan teaches wherein the first candidate knowledge item meaning comprises a weighted vector of concepts. (**Moldovan**, p37, c2; Weighted vector of concepts of applicant maps to 'Each such noun is stored together with a weight w that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan. Therefore, 'first candidate knowledge item meaning is represented as a weighted vector of concepts' of applicant is illustrated by 'Each such noun is stored together with a weight w that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan.)

#### Claim 14

Moldovan teaches receiving data identifying a first knowledge item (**Moldovan**, p35, c1; 'First knowledge item' of applicant maps to 'keyword' of Moldovan.); retrieving, from a database, first information to be used in selecting a meaning for the first knowledge item. (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan.)

Moldovan does not teach where the database associates each of a plurality of knowledge items with information related to the knowledge items.

Art Unit: 2129

Miller teaches where the database associates each of a plurality of knowledge items with information related to the knowledge items. (**Miller**, p39; 'A plurality of knowledge items' of applicant maps to 'a set W of pairs (f, s)' of Miller. 'Knowledge items with information related to the knowledge item' of applicant maps to the string 'f' and its associated sense, 's' of Miller.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Moldovan by matching meaning with an item as taught by Miller to have where the database associates each of a plurality of knowledge items with information related to the knowledge items.

For the purpose of generating meaning which then can be later mapped to similar meanings items.

Moldovan teaches the first information is one or more documents related to the knowledge item (**Moldovan**, abstract; 'Documents' of applicant maps to 'information is available on the Internet' of Moldovan.); determining one or more first information meanings of the first information (**Moldovan**, p35, c2; 'One or more first information meanings' of applicant maps to 'Consider for example, that  $W_2$  has m senses' of Moldovan.), the determining comprising, for each document in the first information, selecting one or more meanings for terms in the document from meanings associated with the terms by in a computer-readable data collection that includes terms and associates at least one meaning with each of the terms, and then determining one or more first information meanings of the document from the one or more meanings for terms in the document (**Moldovan**, p35, c1-2, 'Terms and associates at least one



Art Unit: 2129

meaning with each of the terms' of applicant maps to  $W_2^1, W_2^{1(1)}, W_2^{1(2)}, \dots, W_2^{1(k1)}$ ' of Moldovan.); determining a plurality of candidate knowledge item meanings of the first knowledge item by selecting a plurality of meanings from meanings associated with one or more terms of the knowledge item in the computer-readable data collection (**Moldovan**, p35, c1-2; 'A candidate knowledge item meanings of the first knowledge item' of applicant maps to  $W_2^1, W_2^2$  through  $W_2^m$  of Moldovan.); determining a strength of relationship between each candidate knowledge item meaning and each first information meaning of the first information, and determining a respective selection probability for each candidate knowledge item meaning from the strengths (**Moldovan**, p36, c1; 'Strength of relationship' of applicant maps to 'Using such a query, we get the number of hits for each sense  $i$  of  $W_2$  and this provides a ranking of  $m$  senses of  $W_2$  as they relate to  $W_1$ ' of Moldovan.); and selecting and storing a first candidate knowledge item meaning from the plurality of candidate knowledge item meanings as a meaning of the first knowledge item according to the respective selection probability associated with each candidate knowledge item meaning. (**Moldovan**, p37, c2; Selecting and storing a knowledge item meaning and its associated knowledge item of applicant maps to 'Each such noun is stored together with a weight  $w$  that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan.)

## Claim 15

Moldovan teaches wherein the first knowledge item is a keyword received as input to a search engine. (**Moldovan**, abstract; Moldovan gives examples of search

Art Unit: 2129

engines such as 'Alta Vista, Infoseek, Lycos.' The theme of Moldovan is to improve Internet searches. Thus it is inherent that keywords are inputted into search engines.)

#### Claim 23

Moldovan teaches establishing an initial probability, for each of the plurality of candidate knowledge item meanings, that the first knowledge item be resolved to the one of the plurality of candidate knowledge item meanings (**Moldovan**, p37 c1 through c2; 'Establishing an initial probability' of applicant maps to the results of algorithm 1 of Moldovan. This relates to 'candidate knowledge item meaning' and the 'first knowledge item' maps to the 'verb – noun pair V – N' of Moldovan.); wherein the selection probabilities are further based on the initial probabilities. (**Moldovan**, p37 c1 through c2; 'Selection probabilities are further based on the initial probabilities' of applicant maps to 'Only the first 't' possible senses of this ranking will be considered' of Moldovan.)

#### Claim 24

Moldovan teaches wherein the first candidate knowledge item meaning comprises a weighted vector of concepts. (**Moldovan**, p37, c2; Weighted vector of concepts of applicant maps to 'Each such noun is stored together with a weight w that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan. Therefore, 'first candidate knowledge item meaning is represented as a weighted vector of concepts' of applicant is illustrated by 'Each such noun is stored

Art Unit: 2129

together with a weight  $w$  that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan.)

### Claim 32

Moldovan teaches receiving data identifying a first knowledge item (**Moldovan**, p35, c1; 'First knowledge item' of applicant maps to 'keyword' of Moldovan.); retrieving, from a database, identifying first information to be used in selecting a meaning for the first knowledge item. (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan.)

Moldovan does not teach where the database associates each of a plurality of knowledge items with information related to the knowledge item.

Miller teaches where the database associates each of a plurality of knowledge items with information related to the knowledge item. (**Miller**, p39; 'A plurality of knowledge items' of applicant maps to 'a set  $W$  of pairs  $(f, s)$ ' of Miller. 'Knowledge items with information related to the knowledge item' of applicant maps to the string ' $f$ ' and its associated sense, ' $s$ ' of Miller.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Moldovan by matching meaning with an item as taught by Miller to have where the database associates each of a plurality of knowledge items with information related to the knowledge item.

Art Unit: 2129

For the purpose of generating meaning which then can be later mapped to similar meanings items.

Moldovan teaches the first information is one or more documents related to of the first knowledge item (**Moldovan**, abstract; 'Documents' of applicant maps to 'information is available on the Internet' of Moldovan.); determining one or more first information meanings of the first information (**Moldovan**, p35, c2; 'One or more first information meanings' of applicant maps to 'Consider for example, that  $W_2$  has m senses' of Moldovan.), the determining comprising, for each document in the first information, selecting one or more meanings for terms in the document from meanings associated with the terms in a computer-readable data collection that includes terms and associates at least one meaning with each of the terms, and then determining one or more first information meanings of the document from the one or more meanings for the terms in the document (**Moldovan**, p35, c1-2, 'Terms and associates at least one meaning with each of the terms' of applicant maps to  $W_2^1, W_2^{1(1)}, W_2^{1(2)}, \dots W_2^{1(k1)}$ , of Moldovan.); determining a plurality of candidate knowledge item meanings of the first knowledge item by selecting a plurality of meanings from meanings associated with one or more terms of the first knowledge item in the computer-readable data collection (**Moldovan**, p35, c1-2; 'A plurality of candidate knowledge item meanings of the first knowledge item by selecting a plurality of meanings' of applicant maps to  $W_2^1, W_2^2$  through  $W_2^m$  of Moldovan.); determining a strength of relationship between each candidate knowledge item meaning and each first information meaning of the first information, and determining a respective selection probability for each candidate knowledge item

Art Unit: 2129

meaning from the strengths (**Moldovan**, p36, c1; 'Strength of relationship' of applicant maps to 'Using such a query, we get the number of hits for each sense  $i$  of  $W_2$  and this provides a ranking of  $m$  senses of  $W_2$  as they relate to  $W_1$ ' of Moldovan.); and selecting and storing a first candidate knowledge item meaning from the plurality of candidate knowledge item meanings as a meaning of the first knowledge item according to the respective selection probability associated with each candidate knowledge item meaning. (**Moldovan**, p37, c2; Selecting and storing a knowledge item meaning and its associated knowledge item of applicant maps to 'Each such noun is stored together with a weight  $w$  that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan. 'According to the respective selection probability' of applicant maps to the weight ' $w$ ' of Moldovan.)

### Claim 33

Moldovan teaches wherein the first knowledge item is a keyword received as input to a search engine. (**Moldovan**, abstract; Moldovan gives examples of search engines such as 'Alta Vista, Infoseek, Lycos.' The theme of Moldovan is to improve Internet searches. Thus it is inherent that keywords are inputted into search engines.)

### Claim 39

Moldovan teaches establishing an initial probability, for each of the plurality of candidate knowledge item meanings, that the first knowledge item be resolved to the one of the plurality of candidate knowledge item meanings (**Moldovan**, p37 c1 through

Art Unit: 2129

c2; 'Establishing an initial probability' of applicant maps to the results of algorithm 1 of Moldovan. This relates to 'candidate knowledge item meaning' and the 'first knowledge item' maps to the 'verb – noun pair V – N' of Moldovan.); wherein the selection probabilities are further based on the initial probabilities. (**Moldovan**, p37 c1 through c2; 'Selection probabilities are further based on the initial probabilities' of applicant maps to 'Only the first 't' possible senses of this ranking will be considered' of Moldovan.)

#### Claim 40

Moldovan teaches wherein the first candidate knowledge item meaning is represented as a weighted vector of concepts. (**Moldovan**, p37, c2; Selecting and storing a knowledge item meaning and its associated knowledge item of applicant maps to 'Each such noun is stored together with a weight w that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan. Therefore, 'first candidate knowledge item meaning is represented as a weighted vector of concepts' of applicant is illustrated by 'Each such noun is stored together with a weight w that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan.)

#### Claim 52

Moldovan teaches determining a meaning for each document in the first information using the computer-readable data collection (**Moldovan**, p35, c2; 'Determining a meaning' of applicant maps to 'W<sub>2</sub> has m senses' of Moldovan.);

Art Unit: 2129

receiving related data for the first information (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan. Therefore, 'receiving related data' of applicant maps to 'corresponding semantic form' of Moldovan.); calculating a weight for each document in the first information from the related data (**Moldovan**, p37, c2; 'Calculating a weight' of applicant maps to 'Each such noun is stored together with a weight  $w$  that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan. If a weight is stored with a noun, then it is inherent that a weight is calculated.); and determining the one or more first information meanings by combining the determined meanings for each document in the first information, where the determined meaning for each document is weighted by the calculated weight for the document. (**Moldovan**, p35 c2; 'Determining the one or more first information meanings by combining the determined meanings for each document in the first information' of applicant maps to 'We can then form  $W_1 - W_i(s)^2$  pairs' of Moldovan. This is used to perform searches.)

#### Claim 54

Moldovan teaches determining a meaning for each document in the first information using the computer-readable data collection (**Moldovan**, p35, c2; 'Determining a meaning' of applicant maps to ' $W_2$  has  $m$  senses' of Moldovan.); receiving related data for the first information (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding

Art Unit: 2129

semantic form as defined in WordNet' of Moldovan. Therefore, 'receiving related data' of applicant maps to 'corresponding semantic form' of Moldovan.); calculating a weight for each document in the first information from the related data (**Moldovan**, p37, c2; 'Calculating a weight' of applicant maps to 'Each such noun is stored together with a weight  $w$  that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan. If a weight is stored with a noun, then it is inherent that a weight is calculated.); and determining the one or more first information meanings by combining the determined meanings for each document in the first information, where the determined meaning for each document is weighted by the calculated weight for the document. (**Moldovan**, p35 c2; 'Determining the one or more first information meanings by combining the determined meanings for each document in the first information' of applicant maps to 'We can then form  $W_1 - W_i(s)^2$  pairs' of Moldovan. This is used to perform searches.)

#### Claim 56

Moldovan teaches determining a meaning for each document in the first information using the computer-readable data collection (**Moldovan**, p35, c2; 'Determining a meaning' of applicant maps to ' $W_2$  has  $m$  senses' of Moldovan.); receiving related data for the first information (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan. Therefore, 'receiving related data' of applicant maps to 'corresponding semantic form' of Moldovan.); calculating a weight for



Art Unit: 2129

each document in the first information from the related data (**Moldovan**, p37, c2; 'Calculating a weight' of applicant maps to 'Each such noun is stored together with a weight w that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan. If a weight is stored with a noun, then it is inherent that a weight is calculated.); and determining the one or more first information meanings by combining the determined meanings for each document in the first information, where the determined meaning for each document is weighted by the calculated weight for the document. (**Moldovan**, p35 c2; 'Determining the one or more first information meanings by combining the determined meanings for each document in the first information' of applicant maps to 'We can then form  $W_1 - W_i(s)^2$  pairs' of Moldovan. This is used to perform searches.)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2129

Claims 4, 17 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moldovan and Miller as applied to claims 1, 2, 10, 11, 14, 15, 23, 24, 32, 33, 39, 40, 52, 54 above, and further in view of Knoblock. ('Searching the world wide web', referred to as **Knoblock**)

Claims 4, 17 and 34

Moldovan and Miller do not teach wherein the first information comprises an advertisement from an advertiser who has bid on the first knowledge item.

Knoblock teaches wherein the first information comprises an advertisement from an advertiser who has bid on the first knowledge item. (**Knoblock**, p10, c3; 'Advertiser who has bid on the first knowledge item' of applicant maps to 'For targeted advertising, the service checks the user's query terms against a list of keywords that have been sold at a premium to the advertisers' of Knoblock.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan and Miller by introducing the concept of bidding on a keyword as taught by Knoblock to have wherein the first information comprises an advertisement from an advertiser who has bid on the first knowledge item.

For the purpose of aiding advertisers in target marketing.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7, 18-20 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moldovan, Miller and Knoblock as applied to claims 1, 2, 4, 10, 11, 14, 15, 17, 23, 24, 32, 33, 34, 39, 40, 52, 54 above, and further in view of McCandless. ('Web Advertising', referred to as **McCandless**)

Claims 5, 18, 35

Moldovan, Miller and Knoblock do not teach wherein the first information further comprises a destination web page associated with the advertisement.

McCandless teaches wherein the first information further comprises a destination web page associated with the advertisement. (**McCandless**, p8, C3:38 through p9, C1:14; 'Web page' of applicant is equivalent to 'page' of McCandless. 'Advertisement' of applicant is equivalent to 'banner' of McCandless.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan, Miller and Knoblock by referencing web pages and

Art Unit: 2129

advertisements as taught by McCandless to have wherein the first information further comprises a destination web page associated with the advertisement.

For the purpose of employing the invention towards target marketing techniques.

Claims 6, 19, 36

Moldovan teaches wherein the first information further comprises related data.

(**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan.

Therefore, 'related data' of applicant maps to 'corresponding semantic form' of Moldovan.)

Claims 7, 20, 37

Moldovan, Miller and Knoblock do not teach wherein the related data comprises cost per click data associated with the advertisement.

McCandless teaches wherein the related data comprises cost per click data associated with the advertisement. (**McCandless**, p9, C1:15-29; 'Cost per click' of applicant is equivalent to 'cost per thousand(CPM)' of McCandless.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan, Miller and Knoblock by using standard cost per click techniques as taught by McCandless to have wherein the related data comprises cost per click data associated with the advertisement.

For the purpose of using standard web related data collection techniques.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12, 25 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moldovan and Miller as applied to claims 1, 2, 10, 11, 14, 15, 23, 24, 32, 33, 39, 40, 52, 54 above, and further in view of Lang. (U. S. Patent 5867799, referred to as **Lang**)

Claims 12, 25, 41

Moldovan and Miller do not teach wherein the first candidate knowledge item meaning comprises a related cluster of words.

Lang teaches wherein the first candidate knowledge item meaning comprises a related cluster of words. (**Lang**, C20:35-50; A 'related cluster of words' of applicant can be seen as a vector 'Weighted vector of concepts' of applicant is equivalent to 'the

Art Unit: 2129

vector Ms, that are related to any concept C, may be looked up' of Lang.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan and Miller by using synonyms as taught by Lang to have wherein the first candidate knowledge item meaning comprises a related cluster of words.

For the purpose of using synonyms as additional search keywords.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 22 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moldovan and Miller as applied to claims 1, 2, 10, 11, 14, 15, 23, 24, 32, 33, 39, 40, 52, 54 above, and further in view of Loveland. (U. S. Patent Publication 20020161608, referred to as **Loveland**)

Claims 9, 22, 38

Moldovan and Miller do not teach wherein the plurality of candidate knowledge item meanings are each represented as an associated concept and wherein selecting the first candidate knowledge item meaning comprises selecting at least one of the associated concepts.

Loveland teaches wherein the plurality of candidate knowledge item meanings are each represented as an associated concept and wherein selecting the first candidate knowledge item meaning comprises selecting at least one of the associated concepts. (**Loveland**, ¶0085; 'Plurality of candidate knowledge item meanings are represented as an associated concept' of applicant maps to 'synonym list' of Loveland.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan and Miller by having similar meanings grouped under a concept as taught by Loveland to have wherein the plurality of candidate knowledge item meanings are each represented as an associated concept and wherein selecting the first candidate knowledge item meaning comprises selecting at least one of the associated concepts.

For the purpose of expanding a search with similar meanings.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2129

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 27, 31, 42, 46, 47, 51, 53, 55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moldovan, Miller and Loveland as applied to claims 9, 22 and 38 above, and further in view of McCandless. ('Web advertising', referred to as **McCandless**)

#### Claim 27

Moldovan teaches receiving a first keyword (**Moldovan**, p35, c1; 'First keyword' of applicant maps to 'keyword' of Moldovan.); retrieving, from a database, first information to be used in selecting a meaning for the first keyword. (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan.)

Moldovan does not teach where the database associates each of a plurality of keywords with information is related to the keyword.

Miller teaches where the database associates each of a plurality of keywords with information is related to the keyword. (**Miller**, p39; 'A plurality of keywords' of applicant maps to 'a set W of pairs (f, s)' of Miller. 'Information is related to the keyword' of applicant maps to the string 'f' and its associated sense, 's' of Miller.) It would have



Art Unit: 2129

been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Moldovan by having keywords and associated meanings as taught by Miller to have where the database associates each of a plurality of keywords with information is related to the keyword.

For the purpose of expanding a search using concepts instead of keywords.

Moldovan teaches determining, in a computer system comprising one or more servers (**Moldovan**, abstract; A computer system comprising one or more servers of applicant maps to the Internet of Moldovan.), one or more first information meanings of the first information (**Moldovan**, p35, c2; 'One or more first information meanings' of applicant maps to 'Consider for example, that  $W_2$  has m senses' of Moldovan.), the determining comprising, for one or more documents in the first information, selecting one or more meanings for terms in the document from meanings associated with the terms in a computer-readable data collection that includes terms and associates at least one meaning with each term, and then determining one or more first information meanings of the document from the one or more meanings for terms in the document (**Moldovan**, p35, c1-2, 'Terms and associates at least one meaning with each of the terms' of applicant maps to  $W_2^1, W_{2,}^{1(1)}, W_{2,}^{1(2)}, \dots W_{2,}^{1(k1)}$  of Moldovan.); determining, in the computer system, a plurality of candidate keyword meanings of the first keyword by selecting a plurality of meanings from meanings associated with the first keyword in the computer-readable data collection (**Moldovan**, p35, c1-2; 'A candidate keyword meanings of the first keyword' of applicant maps to  $W_2^1, W_{2,}^2$  through  $W_{2,}^m$  of Moldovan.); determining, in the computer system, a strength of relationship between each candidate

Art Unit: 2129

keyword meaning and each first information meaning of the first information, and determining a respective selection probability for each candidate keyword meaning from the strengths (**Moldovan**, p36, c1; 'Strength of relationship' of applicant maps to 'Using such a query, we get the number of hits for each sense  $i$  of  $W_2$  and this provides a ranking of  $m$  senses of  $W_2$  as they relate to  $W_1$ ' of Moldovan.); selecting a first candidate keyword meaning from the plurality of candidate keyword meanings according to the respective selection probabilities of each candidate keyword meaning (**Moldovan**, p37, c2; Selecting a meaning and its associated knowledge item of applicant maps to 'Each such noun is stored together with a weight  $w$  that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan. 'According to the respective selection probability' of applicant maps to the weight ' $w$ ' of Moldovan.); matching the first keyword to web page content associated with a web page (**Moldovan**, abstract; Moldovan gives examples of search engines such as 'Alta Vista, Infoseek, Lycos.' The theme of Moldovan is to improve Internet searches. Thus it is inherent that keywords are inputted into search engines for matching purposes.); determining a semantic sub-space defined by a radius of semantic distance from the first candidate keyword meaning. (**Moldovan**, p35 c1; 'Determining a semantic sub-space' of applicant maps to 'The next step refines the ordering of senses by using a semantic method that measures the number of common words within a semantic distance of two of more words' of Moldovan.)

Moldovan and Miller do not teach identifying an advertisement having an advertisement meaning that falls within the semantic sub-space, and matching the

Art Unit: 2129

keyword to the advertisement; associating, in the computer system, the advertisement with the web page content.

Loveland teaches identifying an advertisement having an advertisement meaning that falls within the semantic sub-space, and matching the keyword to the advertisement (**Loveland**, ¶0085; 'Advertisement meaning that falls within the semantic sub-space' of applicant maps to 'In this manner a keyword advertiser, such as a cabinet maker, may direct his advertising to those who seek keyword information about kitchen or bath remodeling. Keyword advertiser information 130 may comprise a keyword and synonym list, the advertiser name and contact information, the advertiser logo, links to an advertiser website, costs and an impression count or hit count to monitor advertisement activity' of Loveland.); associating, in the computer system, the advertisement with the web page content. (**Loveland**, ¶0033, abstract; 'Advertisement' of applicant maps to 'advertising data' of Loveland, 'Web page content' of applicant is inherent to 'the internet' of Loveland.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan and Miller by employing the concept of semantic subspace as taught by Loveland to identifying an advertisement having an advertisement meaning that falls within the semantic sub-space, and matching the keyword to the advertisement; associating, in the computer system, the advertisement with the web page content.

For the purpose of using the domain of semantic subspace to matches with the range of advertising meaning to accomplish target marketing.

Art Unit: 2129

Moldovan, Miller and Loveland do not teach outputting the advertisement when the web page is displayed.

McCandless teaches outputting the advertisement when the web page is displayed. (**McCandless**, p8 c2; 'Outputting the advertisement when the web page is displayed' of applicant maps to 'Every ad served on the web goes to an individual who can be characterized personally, rather than a group that must be characterized statistically' of McCandless.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan, Miller and Loveland by outputting the results as taught by McCandless to outputting the advertisement when the web page is displayed.

For the purpose of displaying the targeted marketing advertisement.

#### Claim 31

Moldovan teaches wherein the first information comprises search results associated with the first keyword. (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan. Therefore, 'search results associated with the first keyword' of applicant maps to 'corresponding semantic form' of Moldovan.)

#### Claim 42

Art Unit: 2129

Moldovan teaches receiving a first keyword (**Moldovan**, p35, c1; 'First keyword' of applicant maps to 'keyword' of Moldovan.); retrieving, from a database, first information to be used in selecting a meaning for the first keyword (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan.)

Moldovan does not teach where the database associates each of a plurality of keywords with information related to the keyword, and the first information is related to the first keyword.

Miller teaches where the database associates each of a plurality of keywords with information related to the keyword, and the first information is related to the first keyword. (**Miller**, p39; 'A plurality of knowledge items' of applicant maps to 'a set W of pairs (f, s)' of Miller. 'Knowledge items with information related to the knowledge item' of applicant maps to the string 'f' and its associated sense, 's' of Miller.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Moldovan by having keywords and associated meanings as taught by Miller to have database associates each of a plurality of keywords with information related to the keyword, and the first information is related to the first keyword.

For the purpose of expanding a search using concepts instead of keywords.

Moldovan teaches determining one or more first information meanings of the first information (**Moldovan**, p35, c2; 'One or more first information meanings' of applicant maps to 'Consider for example, that  $W_2$  has m senses' of Moldovan.), the determining

Art Unit: 2129

comprising, for one or more documents in the first information, selecting one or more meanings for terms in the document from meanings associated with the terms in a computer-readable data collection that includes terms and associates at least one meaning with each term, and then determining one or more first information meanings of the document from the one or more meanings for terms in the document (**Moldovan**, p35, c1-2, 'Terms and associates at least one meaning with each of the terms' of applicant maps to  $W^1_2, W^{1(1)}_2, W^{1(2)}_2, \dots W^{1(k1)}_2$ ' of Moldovan.); determining, in the computer system, a plurality of candidate keyword meanings of the first keyword by selecting a plurality of meanings from meanings associated with the first keyword in the computer-readable data collection (**Moldovan**, p35, c1-2; 'A candidate keyword meanings of the first keyword' of applicant maps to  $W^1_2, W^2_2$  through  $W^m_2$  of Moldovan.); determining, in the computer system, a strength of relationship between each candidate keyword meaning and each first information meaning of the first information, and determining a respective selection probability for each candidate keyword meaning from the strengths (**Moldovan**, p36, c1; 'Strength of relationship' of applicant maps to 'Using such a query, we get the number of hits for each sense i of  $W_2$  and this provides a ranking of m senses of  $W_2$  as they relate to  $W_1$ ' of Moldovan.); selecting a first candidate keyword meaning from the plurality of candidate keyword meanings according to the respective selection probabilities of each candidate keyword meaning (**Moldovan**, p37, c2; Selecting and storing a knowledge item meaning and its associated knowledge item of applicant maps to 'Each such noun is stored together with a weight w that indicates the level in the subhierarchy of the verb concept in whose

Art Unit: 2129

gloss the noun was found' of Moldovan. 'According to the respective selection probability' of applicant maps to the weight 'w' of Moldovan.); matching the first keyword to web page content associated with a web page (**Moldovan**, abstract; 'Matching the first keyword to web page content associated with a web page' is a function of a Internet search engine. Moldovan gives examples of search engines such as 'Alta Vista, Infoseek, Lycos.') determining a semantic sub-space defined by a radius of semantic distance from the first candidate keyword meaning (**Moldovan**, p35 c1; 'Determining a semantic sub-space' of applicant maps to 'The next step refines the ordering of senses by using a semantic method that measures the number of common words within a semantic distance of two of more words' of Moldovan.)

Moldovan and Miller do not teach identifying an advertisement having an advertisement meaning that falls within the semantic sub-space, and matching the keyword to the advertisement; associating, in the computer system, the advertisement with the web page content.

Loveland teaches identifying an advertisement having an advertisement meaning that falls within the semantic sub-space, and matching the keyword to the advertisement (**Loveland**, ¶0085; 'Advertisement meaning that falls within the semantic sub-space' of applicant maps to 'In this manner a keyword advertiser, such as a cabinet maker, may direct his advertising to those who seek keyword information about kitchen or bath remodeling. Keyword advertiser information 130 may comprise a keyword and synonym list, the advertiser name and contact information, the advertiser logo, links to an advertiser website, costs and an impression count or hit count to monitor

Art Unit: 2129

advertisement activity' of Loveland.); associating, in the computer system, the advertisement with the web page content. (**Loveland**, ¶0033, abstract; 'Advertisement' of applicant maps to 'advertising data' of Loveland, 'Web page content' of applicant is inherent to 'the internet' of Loveland.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan and Miller by employing the concept of semantic subspace as taught by Loveland to have identifying an advertisement having an advertisement meaning that falls within the semantic sub-space, and matching the keyword to the advertisement; associating, in the computer system, the advertisement with the web page content.

For the purpose of using the domain of semantic subspace to matches with the range of advertising meaning to accomplish target marketing.

Moldovan, Miller and Loveland do not teach outputting the advertisement when the web page is displayed.

McCandless teaches outputting the advertisement when the web page is displayed. (**McCandless**, p8 c2; 'Outputting the advertisement when the web page is displayed' of applicant maps to 'Every ad served on the web goes to an individual who can be characterized personally, rather than a group that must be characterized statistically' of McCandless.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan, Miller and Loveland by outputting the results as taught by McCandless to outputting the advertisement when the web page is displayed.



For the purpose of displaying the targeted marketing advertisement.

Claim 46

Moldovan teaches wherein the first information further comprises search results associated with the keyword. (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan. Therefore, 'search results associated with the first keyword' of applicant maps to 'corresponding semantic form' of Moldovan.)

Claim 47

Moldovan teaches receiving a first keyword (**Moldovan**, p35, c1; 'First keyword' of applicant maps to 'keyword' of Moldovan.); retrieving first information to be used in selecting a meaning for the first keyword from a database (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan.)

Moldovan does not teach where the database associates each of a plurality keywords with information related to the keyword, and the first information is related to the first keyword.

Miller teaches where the database associates each of a plurality keywords with information related to the keyword, and the first information is related to the first keyword. (**Miller**, p39; 'A plurality of knowledge items' of applicant maps to 'a set W of pairs (f, s)' of Miller. 'Knowledge items with information related to the knowledge item' of

Art Unit: 2129

applicant maps to the string 'f' and its associated sense, 's' of Miller.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the teachings of Moldovan by having keywords and associated meanings as taught by Miller to have where the database associates each of a plurality of keywords with information related to the keyword, and the first information is related to the first keyword.

For the purpose of expanding a search using concepts instead of keywords.

Moldovan teaches determining one or more first information meanings of the first information, (**Moldovan**, p35, c2; 'One or more first information meanings' of applicant maps to 'Consider for example, that  $W_2$  has  $m$  senses' of Moldovan.) the determining comprising, for one or more documents in the first information, selecting one or more meanings for terms in the document from meanings associated with the terms in a computer-readable data collection that includes terms and associates at least one meaning with each term, and then determining one or more first information meanings of the document from the one or more meanings for terms in the document; (**Moldovan**, p35, c1-2, 'Terms and associates at least one meaning with each of the terms' of applicant maps to  $W^1_2, W^{1(1)}_2, W^{1(2)}_2, \dots, W^{1(k1)}_2$ ' of Moldovan.) determining, in the computer system, a plurality of candidate keyword meanings of the first keyword by selecting a plurality of meanings from meanings associated with the first keyword in the computer-readable data collection (**Moldovan**, p35, c1-2; 'A candidate keyword meanings of the first keyword' of applicant maps to  $W^1_2, W^2_2$  through  $W^m_2$  of Moldovan.); determining, in the computer system, a strength of relationship between each candidate

Art Unit: 2129

keyword meaning and each first information meaning of the first information, and determining a respective selection probability for each candidate keyword meaning from the strengths (**Moldovan**, p36, c1; 'Strength of relationship' of applicant maps to 'Using such a query, we get the number of hits for each sense  $i$  of  $W_2$  and this provides a ranking of  $m$  senses of  $W_2$  as they relate to  $W_1$ ' of Moldovan.); selecting a first candidate keyword meaning from the plurality of candidate keyword meanings according to the respective selection probabilities of each candidate keyword meaning (**Moldovan**, p37, c2; Selecting and storing a knowledge item meaning and its associated knowledge item of applicant maps to 'Each such noun is stored together with a weight  $w$  that indicates the level in the subhierarchy of the verb concept in whose gloss the noun was found' of Moldovan. 'According to the respective selection probability' of applicant maps to the weight ' $w$ ' of Moldovan.); matching the first keyword to web page content associated with a web page (**Moldovan**, abstract; 'Matching the first keyword to web page content associated with a web page' is a function of a Internet search engine. Moldovan gives examples of search engines such as 'Alta Vista, Infoseek, Lycos. '); determining a semantic sub-space defined by a radius of semantic distance from the first candidate keyword meaning. (**Moldovan**, p35 c1; 'Determining a semantic sub-space' of applicant maps to 'The next step refines the ordering of senses by using a semantic method that measures the number of common words within a semantic distance of two of more words' of Moldovan.)

Moldovan and Miller do not teach identifying an advertisement having an advertisement meaning that falls within the semantic sub-space, and matching the

Art Unit: 2129

keyword to the advertisement; associating, in the computer system, the advertisement with the web page content.

Loveland teaches identifying an advertisement having an advertisement meaning that falls within the semantic sub-space, and matching the keyword to the advertisement (**Loveland**, ¶0085; 'Advertisement meaning that falls within the semantic sub-space' of applicant maps to 'In this manner a keyword advertiser, such as a cabinet maker, may direct his advertising to those who seek keyword information about kitchen or bath remodeling. Keyword advertiser information 130 may comprise a keyword and synonym list, the advertiser name and contact information, the advertiser logo, links to an advertiser website, costs and an impression count or hit count to monitor advertisement activity' of Loveland.); associating, in the computer system, the advertisement with the web page content. (**Loveland**, ¶0033, abstract; 'Advertisement' of applicant maps to 'advertising data' of Loveland, 'Web page content' of applicant is inherent to 'the internet' of Loveland.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan and Miller by employing the concept of semantic subspace as taught by Loveland to identifying an advertisement having an advertisement meaning that falls within the semantic sub-space, and matching the keyword to the advertisement; associating, in the computer system, the advertisement with the web page content.

For the purpose of using the domain of semantic subspace to matches with the range of advertising meaning to accomplish target marketing.

Art Unit: 2129

Moldovan, Miller and Loveland do not teach outputting the advertisement when the web page is displayed.

McCandless teaches outputting the advertisement when the web page is displayed. (**McCandless**, p8 c2; 'Outputting the advertisement when the web page is displayed' of applicant maps to 'Every ad served on the web goes to an individual who can be characterized personally, rather than a group that must be characterized statistically' of McCandless.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan, Miller and Loveland by outputting the results as taught by McCandless to outputting the advertisement when the web page is displayed.

For the purpose of displaying the targeted marketing advertisement.

#### Claim 51

Moldovan teaches wherein the first information comprises search results associated with the keyword. (**Moldovan**, p35, c1; 'First information' of applicant maps to 'Each keyword in the query is mapped into its corresponding semantic form as defined in WordNet' of Moldovan. Therefore, 'search results associated with the first keyword' of applicant maps to 'corresponding semantic form' of Moldovan.),

#### Claim 53

Moldovan teaches determining a semantic sub-space defined by a radius of semantic distance from the first candidate knowledge item meaning. (**Moldovan**, p35

Art Unit: 2129

c1; 'Determining a semantic sub-space' of applicant maps to 'The next step refines the ordering of senses by using a semantic method that measures the number of common words within a semantic distance of two of more words' of Moldovan.)

Moldovan and Miller do not teach identifying an advertisement having an advertisement meaning that falls within the semantic sub-space.

Loveland teaches identifying an advertisement having an advertisement meaning that falls within the semantic sub-space. (**Loveland**, ¶0085; 'Advertisement meaning that falls within the semantic sub-space' of applicant maps to 'In this manner a keyword advertiser, such as a cabinet maker, may direct his advertising to those who seek keyword information about kitchen or bath remodeling. Keyword advertiser information 130 may comprise a keyword and synonym list, the advertiser name and contact information, the advertiser logo, links to an advertiser website, costs and an impression count or hit count to monitor advertisement activity' of Loveland.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan and Miller by employing the concept of semantic subspace as taught by Loveland to identifying an advertisement having an advertisement meaning that falls within the semantic sub-space.

For the purpose of using the domain of semantic subspace to matches with the range of advertising meaning to accomplish target marketing.

Moldovan, Miller and Loveland do not teach presenting the advertisement.

McCandless teaches presenting the advertisement. (**McCandless**, p8 c2; 'Presenting the advertisement' of applicant maps to 'Every ad served on the web goes

Art Unit: 2129

to an individual who can be characterized personally, rather than a group that must be characterized statistically' of McCandless.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan, Miller and Loveland by outputting the results as taught by McCandless to presenting the advertisement.

For the purpose of displaying the targeted marketing advertisement.

#### Claim 55

Moldovan teaches determining a semantic sub-space defined by a radius of semantic distance from the first candidate knowledge item meaning. (**Moldovan**, p35 c1; 'Determining a semantic sub-space' of applicant maps to 'The next step refines the ordering of senses by using a semantic method that measures the number of common words within a semantic distance of two of more words' of Moldovan.)

Moldovan and Miller do not teach identifying an advertisement having an advertisement meaning that falls within the semantic sub-space.

Loveland teaches identifying an advertisement having an advertisement meaning that falls within the semantic sub-space. (**Loveland**, ¶0085; 'Advertisement meaning that falls within the semantic sub-space' of applicant maps to 'In this manner a keyword advertiser, such as a cabinet maker, may direct his advertising to those who seek keyword information about kitchen or bath remodeling. Keyword advertiser information 130 may comprise a keyword and synonym list, the advertiser name and contact information, the advertiser logo, links to an advertiser website, costs and an impression

Art Unit: 2129

count or hit count to monitor advertisement activity' of Loveland.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan and Miller by employing the concept of semantic subspace as taught by Loveland to identifying an advertisement having an advertisement meaning that falls within the semantic sub-space.

For the purpose of using the domain of semantic subspace to matches with the range of advertising meaning to accomplish target marketing.

Moldovan, Miller and Loveland do not teach presenting the advertisement.

McCandless teaches presenting the advertisement. (**McCandless**, p8 c2; 'Presenting the advertisement' of applicant maps to 'Every ad served on the web goes to an individual who can be characterized personally, rather than a group that must be characterized statistically' of McCandless.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan, Miller and Loveland by outputting the results as taught by McCandless to presenting the advertisement.

For the purpose of displaying the targeted marketing advertisement.

#### Claim 57

Moldovan teaches determining a semantic sub-space defined by a radius of semantic distance from the first candidate knowledge item meaning. (**Moldovan**, p35 c1; 'Determining a semantic sub-space' of applicant maps to 'The next step refines the



Art Unit: 2129

ordering of senses by using a semantic method that measures the number of common words within a semantic distance of two of more words' of Moldovan.)

Moldovan and Miller do not teach identifying an advertisement having an advertisement meaning that falls within the semantic sub-space.

Loveland teaches identifying an advertisement having an advertisement meaning that falls within the semantic sub-space. (**Loveland**, ¶0085; 'Advertisement meaning that falls within the semantic sub-space' of applicant maps to 'In this manner a keyword advertiser, such as a cabinet maker, may direct his advertising to those who seek keyword information about kitchen or bath remodeling. Keyword advertiser information 130 may comprise a keyword and synonym list, the advertiser name and contact information, the advertiser logo, links to an advertiser website, costs and an impression count or hit count to monitor advertisement activity' of Loveland.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan and Miller by employing the concept of semantic subspace as taught by Loveland to identifying an advertisement having an advertisement meaning that falls within the semantic sub-space.

For the purpose of using the domain of semantic subspace to matches with the range of advertising meaning to accomplish target marketing.

Moldovan, Miller and Loveland do not teach presenting the advertisement.

McCandless teaches presenting the advertisement. (**McCandless**, p8 c2; 'Presenting the advertisement' of applicant maps to 'Every ad served on the web goes to an individual who can be characterized personally, rather than a group that must be

Art Unit: 2129

characterized statistically' of McCandless.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan, Miller and Loveland by outputting the results as taught by McCandless to presenting the advertisement.

For the purpose of displaying the targeted marketing advertisement.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 28-30, 43-45 and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moldovan, Miller, Loveland and McCandless as applied to claims 27, 31, 42, 46, 47, 51, 53, 55 and 57 above, and further in view of McCandless. ('Web advertising', referred to as **McCandless**)

Claims 28, 43, 48

Art Unit: 2129

Moldovan, Miller, Loveland and McCandless wherein the first information comprises text of advertisements associated with advertisers who have bid on the first keyword.

Knoblock teaches wherein the first information comprises text of advertisements associated with advertisers who have bid on the first keyword. (**Knoblock**, p10, c3; ‘Advertiser who has bid on the first knowledge item’ of applicant maps to ‘For targeted advertising, the service checks the user’s query terms against a list of keywords that have been sold at a premium to the advertisers’ of Knoblock.) It would have been obvious to a person having ordinary skill in the art at the time of applicant’s invention to modify the combined teachings of Moldovan, Miller and Loveland and McCandless by using text words which are bid on by advertisers as taught by Knoblock to have wherein the first information comprises text of advertisements associated with advertisers who have bid on the first keyword.

For the purpose of displaying target marketed advertising.

Claims 29, 44, 49

Moldovan, Miller and Loveland do not teach teaches wherein the first information comprises destination web pages associated with the advertisements.

McCandless teaches wherein the first information comprises destination web pages associated with the advertisements. (**McCandless**, p8 c2; ‘Outputting the advertisement when the web page is displayed’ of applicant maps to ‘Every ad served on the web goes to an individual who can be characterized personally, rather than a

Art Unit: 2129

group that must be characterized statistically' of McCandless.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan, Miller and Loveland by linking information to web sites as taught by McCandless to have wherein the first information comprises destination web pages associated with the advertisements.

For the purpose of accomplishing target marketing.

Claims 30, 45, 49

Moldovan, Miller, Loveland and McCandless wherein the first information further comprises other keywords bid on by the advertisers.

Knoblock teaches wherein the first information further comprises other keywords bid on by the advertisers. (**Knoblock**, p10, c3; 'Keywords bid on by the advertisers' of applicant maps to 'For targeted advertising, the service checks the user's query terms against a list of keywords that have been sold at a premium to the advertisers' of Knoblock.) It would have been obvious to a person having ordinary skill in the art at the time of applicant's invention to modify the combined teachings of Moldovan, Miller and Loveland and McCandless by employing keywords as taught by Knoblock to have wherein the first information further comprises other keywords bid on by the advertisers.

For the purpose of expanding the results of targeted marketing

***Conclusion***

3. The prior art of record and not relied upon is considered pertinent to the applicant's disclosure.

-U. S. Patent Publication 20030101126: Cheung; U. S. Patent Publication 20030088554: Ryan; U. S. Patent Publication 20030088525: Velez. These maps keywords and search engines with the paid search engine keyword bidding market.

4. Claims 1, 2, 4-7, 9-12, 14, 15, 17-20, 22, 25, 27-57 are rejected.

***Correspondence Information***

5. Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner Mr. Peter Coughlan, whose telephone number is (571) 272-5990. The Examiner can be reached on Monday through Friday from 7:15 a.m. to 3:45 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor Mr. Donald Sparks can be reached at (571) 272-4201. Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,  
Washington, D. C. 20231;

Hand delivered to:

Receptionist,

Art Unit: 2129

Customer Service Window,

Randolph Building,

401 Dulany Street,

Alexandria, Virginia 22313,

(located on the first floor of the south side of the Randolph Building);

or faxed to:

(571) 272-3150 (for formal communications intended for entry.)

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. C./  
Examiner, Art Unit 2129  
5/3/2010

/Donald Sparks/  
Supervisory Patent Examiner, Art  
Unit 2129